

**EXHIBIT C**  
**to Declaration of Steve Loe**

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6 **BEFORE THE STATE WATER RESOURCE CONTROL BOARD, OFFICE OF**  
7 **ADMINISTRATIVE HEARINGS**

8 **STATE OF CALIFORNIA**

9  
10 In the Matter of:

11 DRAFT CEASE AND DESIST ORDER  
ISSUES AGAINST BLUETRITON  
12 BRANDS, INC.

VV: INV 8217

13 **SUR REBUTTAL TESTIMONY OF**  
14 **STEVE LOE**

**Hydrologic Conditions in Strawberry Canyon are not the Same as Observed by Rowe**

1. In paragraph 122 of his testimony (BTB-6), Mark Nicholls states: “The monthly monitoring maps show hydrologic conditions similar to those described by Mr. Rowe for the period from August 1930 to April 1931.” In paragraph 125, he states, “Specific surface water flow measurements reflect conditions described by Mr. Rowe.” Both statements are incorrect.

**Historical Description**

2. Mr. Rowe observed a very different watershed than exists today. Before the first headwaters diversion, which occurred in August 1930, Mr. Rowe took for granted the Headwaters Springs in describing the design of his proposed study: “I have made no mention of the question of the origin of the springs and their source of water supply, because we can assume that they have been flowing for a great many years and the water has been entering Strawberry Creek.” (SOS 055\_028.) Today Mr. Nicholls states that far from being able to assume the steady supply by headwater springs of a stream, he cannot discern where any springs might have been and alleges the only water in the upper Strawberry Canyon is percolating groundwater with no surface or subsurface connection to Strawberry Creek. (BTB-7)

3. Later, in May of 1931, Mr. Rowe wrote:

Strawberry Creek drains a portion of the south slope of the San Bernardino Mountains. It has its source at a group of springs which issue from the side of Strawberry peak. . . . The flow from these springs being deep seated should be fairly regular, especially during the late summer season. The observations show this to be the case. The dependable supply will aggregate about 10 inches of which 8 inches are at present diverted from spring #2 into the pipe line leading to the Arrowhead hotel and vicinity. The water not so diverted flows down the side hill to a common junction at a narrow bed rock gully lined with alder, sycamore, dogwood and cedar trees together with ferns and thimble berry bushes. The junction of flow from all of the upper springs at the head of Strawberry Creek is at station 123 + 00, or 12,300 feet upstream from the old intake . . . to Arrowhead Hotel which was laid in 1929. About a quarter of a mile downstream from this junction point, the stream enters a little valley caused by faulting along the side of the San Bernardino Mountains. At Cienega the flow is augmented by more springs [10, 11, 12]. From the lower end of the Cienega at station 84+00 to the

1 first bed rock crossing Strawberry creek on the surface, which is at  
2 station 61+00, the stream flows in a typical gravel and boulder  
covered canyon bottom lined with alder, sycamore and bay trees.

3 (SOS 051\_001-002.)

4 4. What Mr. Rowe describes in terms of base flow is very different from what Mr.  
5 Nicholls describes in BTB-6 and the studies in BTB-7. During Rowe's observations there were  
6 surface flows in the dry season, in a dry series of years all the way down to the Hotel intake,  
7 approximately 2 miles downstream of the tapped springs. The surface expressions now measured  
8 generally as less than 1-2 gallons per minute during the dry summer months in dry years are nothing  
9 compared to those recorded and reported by Rowe.<sup>1</sup>

#### 10 Rainfall/Snow/Variability

11 5. The monthly monitoring maps Mr. Nicoll's firm prepared are very good for  
12 portraying current dry conditions in the upper canyon. However, the statement that they show  
13 conditions similar to those described by Rowe is not supported by the Rowe flow data or reports.  
14 BTB-7\_87 includes a rainfall chart showing 2018 through 2020. Expanding the window changes the  
15 perspective. Years 2015 and 2016 were lower rainfall years, and spring flows increased in later  
16 2017, 2018, 2019 and early 2020. Years 2020-2022 have been dryer and flow conditions are again  
17 approaching comparable 1930 and 2016-2017 conditions. I make this observation based upon my  
18 regular monitoring of the San Bernardino County Flood Warning System, Rainfall Data Report,  
19 over the course of the last 10 years. Looking at rainfall during the years that Rowe observed (SOS  
20 026\_11) shows that the Rowe years were atypically dry, unlike 2018 to 2020 which were above  
21 average. During those same years of Rowe's observation, the flow in East Twin Creek were very  
low, indicative of the conditions in the larger East Twin Watershed. (SOS 017\_074)

22 6. In paragraph 127 of his testimony, Mr. Nicholls makes certain statements about the

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24 <sup>1</sup> In order to compare data across the various reports in evidence, it is useful to understand how to convert between the  
units used. One Miner's Inch is the equivalent of 9 gallons per minute; 1 gallon per minute is the equivalent of 1,440  
gallons per day; 1 gallon per minute is the equivalent of 1.61 acre-feet/year.

1 variability of conditions observed during Haley & Aldrich's studies in comparison to the variability  
2 observed by Mr. Rowe:

3 127. The Rowe study extended for a period of approximately 9 months  
4 and spanned from late summer through spring. The conditions recorded by  
5 Mr. Rowe during this period reflect conditions observed during the drier  
6 periods of the 59-month study conducted by Haley & Aldrich. It is likely  
7 that if the Rowe study had extended for a longer period that he would have  
8 observed a degree of variability similar to that observed between 2016 and  
9 2021, but with much higher flows and surface expression, especially  
10 during low flow periods.

11 7. Although the variability across the year is interesting, the most important thing for  
12 the environment related to the springs is the summer low flow period when everything else is dry.  
13 That is largely what makes perennial springs and streams so valuable and has resulted in their  
14 protection by law and policy by every state that I am aware of and by the Federal Government. The  
15 beauty of the Rowe data, which has been discounted by Nicholls, is that it was collected prior to and  
16 after initial development and represented a low flow time of year in a low flow series of years. Mr.  
17 Rowe was happy that there were not large storms during his study: "During the winter of 1930-31,  
18 there were very few rains of sufficient quantity to produce any flash runoff. Because of these  
19 comparatively light rains and the absence of snow storage, the season was an ideal one for study."  
20 (SOS 051\_002) In contrast, as discussed in my personal testimony, also submitted today, Mr.  
21 Nicholl's relies upon highly unusual circumstances to make unsupported statements about typical  
22 flows. Those circumstances should have been treated as confounding variables to determining base  
23 flow.  
24

### 25 Monitoring Data

26 8. When I compare the September 2016 flows (BTB 7-214-215.) to those reported by  
27 Rowe in 1930 (SOS 040, 044, and 048), the difference is obvious. Spring 1 had no surface  
28 expression in 2016 (BTB 7-214) and 11 gpm on July 3, 1930 (SOS 040\_003); Spring 2 had no  
29 surface expression in 2016 and 59 gpm in 1930 (SOS 040\_003); Spring 3 had no surface expression  
30 in 2016 and 19 gpm in 1930 (SOS 040\_004); Spring 4 had no surface expression in 2016 and 67

1 gpm in 1930 (SOS 040\_005); Weir 1 (Fl-2) (which represents the flows from all the upper springs  
2 combined) had 0.08 gpm flow in 2016, while it had 170 gpm flow in 1930 (SOS 040-6). A table  
3 comparing these is shown in my slides, SOS 283, Slide 7.

4 9. I selected September 2016 to compare to 1930 because the conditions are similar for  
5 those time periods related to precipitation and flows.

#### 6 **Modern Observations**

7 10. I have personally monitored the condition of Strawberry Creek for decades and its  
8 flow does not match the descriptions of Rowe, pre-diversion. Additionally, riparian conditions  
9 indicative of more water availability on and near the surface no longer exist in the corridor of  
10 Strawberry Creek and its BTB's spring influenced tributaries as it did at the time of Rowe. For  
11 instance at Camp 2, Rowe described alders (a water dependent plant) covering an area about 75 foot  
12 wide on July 3, 1930. (SOS 040\_007.) Below Wier 1 (just below the headwaters' convergence) he  
13 observed a creek lined with alder, fern, and willow (Id. at 006.) Downstream, between Weir 1 and  
14 Station 86 (just below springs 10, 11, 12) Rowe observed "heavy alder growth" (SOS 055\_051).  
15 Further downstream, from the end of the Cienega to Station 61, he described a creek lined with  
16 alder, sycamore and bay (SOS 051\_001-002). This description does not fit the current state of  
17 Strawberry Creek and its tributaries (except in the few remaining permanently flowing reaches)  
18 indicating a significant change in water availability. Finally, Mr. Rowe was preoccupied with  
19 evapotranspiration and alders in his study—so it must have been a "problem" in a way that it could  
20 not be today, given the few alders present. (See SOS 042, 054, 055)

21 11. BTB's own study found large stretches of dry streambed for many months that are  
22 inconsistent with Rowe's Descriptions.

23 12. The Forest Service does not consider the existing conditions of the springs to be  
24 natural and has rated them "poor" and "impaired" due to lower than natural water quantity and also  
25 reduced riparian vegetation. The Forest Service concluded that BTB's diversions have converted

1 perennial flow to intermittent or ephemeral flow at various points in the headwaters. (SOS 027\_33,  
2 summarized in SOS 283, Slide 11.)

3 13. BTB's own contractor, Dames & Moore, stated: "Based on the historical information  
4 concerning Arrowhead Springs, there is no indication that these springs have ever stopped flowing,  
5 even during drought conditions, except when the flows are diverted by the associated bore holes.  
6 Thus these springs are classified as perennial springs." (SOS 016\_60 (bold added) (1999).) And  
7 further stated:

8 if spring water were not harvested in Area A [the headwaters], the  
9 surface water flow in the stream channel below Station 1 would be  
10 expected to increase, with the average base flows over most of the  
11 central watershed Reaches increasing by approximately 20 gpm.  
12 For most of the stream Reaches in Areas A,D, and E, the additional  
13 flow would widen and deepen the surface water flow.  
14 Additionally, if spring water were not harvested, it has  
15 conservatively been assumed that surface water flow would occur  
16 in stream Reaches 2, 5, and 6, located below the Arrowhead  
17 Springs.

18 (SOS 017\_25 (2002); See SOS 283, Slides 9-10 (showing referenced areas and stations))

#### 19 Impact of Stream 2 Development

20 14. Spring 2, which is at 5,310 ft. elevation, was developed after July 3, 1930, and  
21 diverted in August of 1930. (SOS 051-003, 2<sup>nd</sup> paragraph) Prior to diversion, Mr. Rowe measured  
22 Spring 2's flow on May 15, 1930, at 9.25 Q (83 gpm) and July 3, 1930, at 6.54 Q (69 gpm). (SOS  
23 040\_003) Mr. Rowe speculated that diversion would cause the stream below Spring #2 to go dry: "it  
24 is probable that the stream will go dry above weir #2 during the coming summer as spring #2 will  
25 be diverted continuously." <sup>2</sup> (SOS 051\_003, bottom of first full paragraph.) Stream flow at the  
confluence of 1, 2, 3, 4 was 170 gpm on July 3, 1930 (SOS 040\_006) prior to diversion and dropped  
to 20 gpm in October 1930 after development of Spring 2 (SOS 044\_001). Spring 4, flows on July

<sup>2</sup> SOS 049 is a map by Rowe showing the monitoring points. The Haley & Aldrich monitoring points are shown at BTB-7\_540.

1 3, 1930 were 67 gpm (SOS 040\_005) and dropped to a trace after development of Spring 2 (SOS  
2 044\_1, 2, 3, SOS 040\_005). Previously, Spring 4 had been called “Big Spring” and the nearby camp  
3 the “Springs Camp.” Nothing in the area today would be called by these names.

4  
5 **Pre-Diversion Conditions Are Discernable**  
6 **Professional Observation of Diversion Point Selection**

7 15. In paragraph 130 of his testimony, Mr. Nicholls says “There is no clear evidence  
8 indicating where spring orifices may have been located in proximity to the tunnels and boreholes at  
9 the time they were originally developed.” This is inaccurate. There is ample historical and  
10 geographical evidence of the location of springs, including that already discussed above.

11 16. I have summarized on SOS 281, slides 15 to 24 some of the more compelling  
12 information about historical conditions of flow in the canyon. For instance, Figure 1-3 of the 1999  
13 Dames & Moore report is important because it shows that Tunnel 2 was developed where water was  
14 rising to the surface—Spring 2. (SOS 016\_015)

15 17. Further, in my professional opinion, it is highly unlikely that attempts would have  
16 been made to develop springs where none existed, particularly in this case where the water was  
17 marketed as “spring” water. As part of my work for the Forest Service I have looked closely at well  
18 over 100 springs in the process of maintaining them, evaluating proposals to tap the springs,  
19 renewing permits for existing spring diversions, and developing procedures to protect groundwater  
20 and associated springs on National Forest land. Every spring development that I have witnessed in  
21 my 40 year career at the Forest Service was located at the site of a natural spring expression, and  
22 attempts to expose and daylight the underground source or sources leading to the surface. Never has  
23 anyone in my experience has the Forest Service or anyone else tried to develop a spring where there  
24 was no surface expression. In the of case of the tunnels, there is little doubt that BTB’s predecessors  
25 obliterated the original orifice. No one would go to the effort and expense to dig a spring  
development tunnel without starting where the water was coming from and following it to the



1 bedrock source. It is not clear exactly where the original natural spring orifices were because the  
2 spring development by BTB and its predecessors has resulted in the drying of all of the natural  
3 springs that they developed. It is apparent from the historical record that they have removed springs  
4 that once fed the Strawberry Creek watershed.

### 5 **Unsupported Speculation**

6 18. In paragraph 133 of his testimony, Mr. Nicholls makes certain statements about the  
7 impact of BTB's diversions on surface water expression, stating that "[w]ater collection at the  
8 boreholes closest to surface water bodies (Boreholes 1, 1A, 8, 10, 11, and 12) in Strawberry Canyon  
9 does not have a measurable effect on surface water expression at those locations." Mr. Nicholls  
10 continues in paragraph 133 of his testimony: "It reasonably follows that the water collection points  
11 located further from surface water bodies (Tunnels 2 and 3, and Boreholes 7, 7A, 7B, and 7C),  
12 which flow at similar or lower rates, also have no measurable effect on surface water expression  
13 within Strawberry Canyon."

14 19. These general statements are unsupported by Mr. Nicholls and at odds with the  
15 observation of current condition as compared to historical records, as discussed above.

16 20. In paragraph 134 of his testimony, Mr. Nicholls makes certain statements about the  
17 comparison between post-development and pre-development surface water flows.

18 134. It is scientifically unsound to assume that the maximum flows from  
19 boreholes that collect water at points between 66 and 320 feet beneath  
20 ground surface, or tunnels that collect water between 23 feet and 89  
21 beneath ground surface, are equal to pre-development surface water flows.  
22 The boreholes and tunnels are larger in diameter than any natural flow  
23 path in the subsurface and serve to connect individual fractures that may  
24 have had no previous discharge to the ground surface. Consequently, the  
25 volume of water flowing from each of the BTB water collection facilities  
is greater than any flow that might occur at a natural surface water  
expression.

21. This is not necessarily true. Rowe measured flows at the upper spring sites prior to  
development. Flows that have been developed at those sites don't exceed natural flows measured by  
Rowe in dry years by much if at all. After initial development, there were the highest flows and then

1 many have deteriorated in time requiring redevelopment and abandonment of old wells because the  
2 flows had decreased so much.

3 **BTB Was Not Collecting Water from Strawberry Canyon Prior to 1930**

4 22. Mr. Nichols asserts in paragraph 115 of his testimony that: “It is also clear that  
5 Strawberry Canyon had been developed as a water source prior to the studies conducted by Mr.  
6 Rowe, and that the purpose of his studies was to characterize conditions responsible for the  
7 intermittent nature of that water supply.” And, in paragraph 12 of his testimony, Mr. Nicholls states,  
8 with no reference to any source or fact, that “BTB and its predecessors-in-interest have collected  
9 water within Strawberry Canyon for more than 120 years.” Both of these statements are  
10 unsupported and false.

11 23. Strawberry Canyon was not used as a water source prior to the initiation of the  
12 studies conducted by Mr. Rowe. The first water diversion in Strawberry Canyon recorded in any  
13 historical documents I have reviewed is the Hotel pick-up point at the bottom of Rowe’s study area  
14 that was constructed in 1929 and used to deliver spring water after diversion of the original springs  
15 in 1930 and 1931. After that, in 1930, Rowe oversaw the development of Spring 2.

16 24. Nor have I seen any evidence in the historical documents I have reviewed, including  
17 Forest Service permits, that the Hotel or BTB’s predecessors used water from Strawberry Creek or  
18 its headwaters prior to 1929.

19 25. Based upon my review of topographical maps and understanding of the landscape,  
20 accessing Strawberry Creek from the Hotel would have been very difficult and would have  
21 necessitated crossing Cold Water Canyon. And, as East Twin Creek near the Hotel is at a  
22 considerably lower elevation than the Hotel, accessing that source of water fed by Strawberry Creek  
23 would have required pumping water uphill. Neither of these engineering exercises would have made  
24 little sense with the availability of water from Cold Water and Waterman Canyon. If such an  
25 undertaking had been made, it surely would have been mentioned in the numerous historical papers

1 discussing flow monitoring and sourcing of water for the Hotel and for bottling operations.

2  
3 DATED: 4/8/2022

By: /S/ Steve Loe

4 Steve Loe

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